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Fig. 1.

Fig. 2.

Tab. 1.

Philosoph.  
Transact.  
Numb. 178.



Fig. 3.

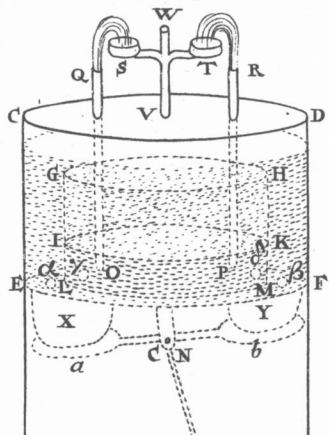


Fig. 4.

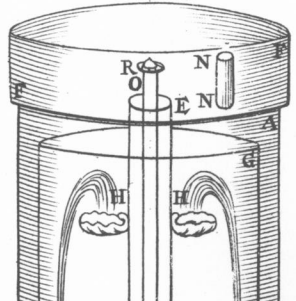


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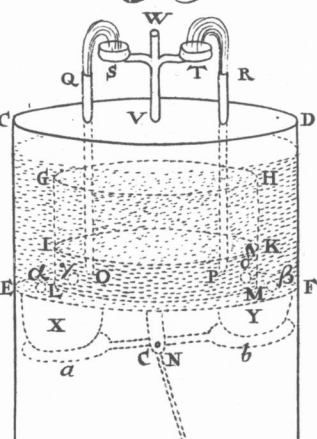
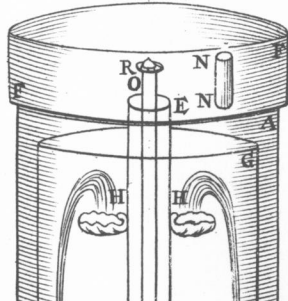


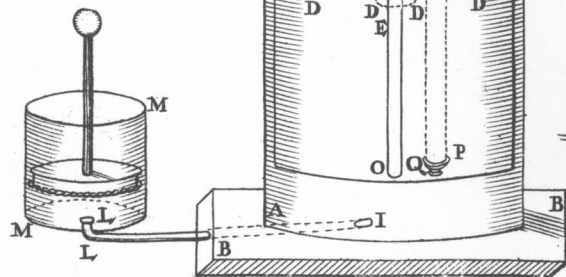
Fig. 4.



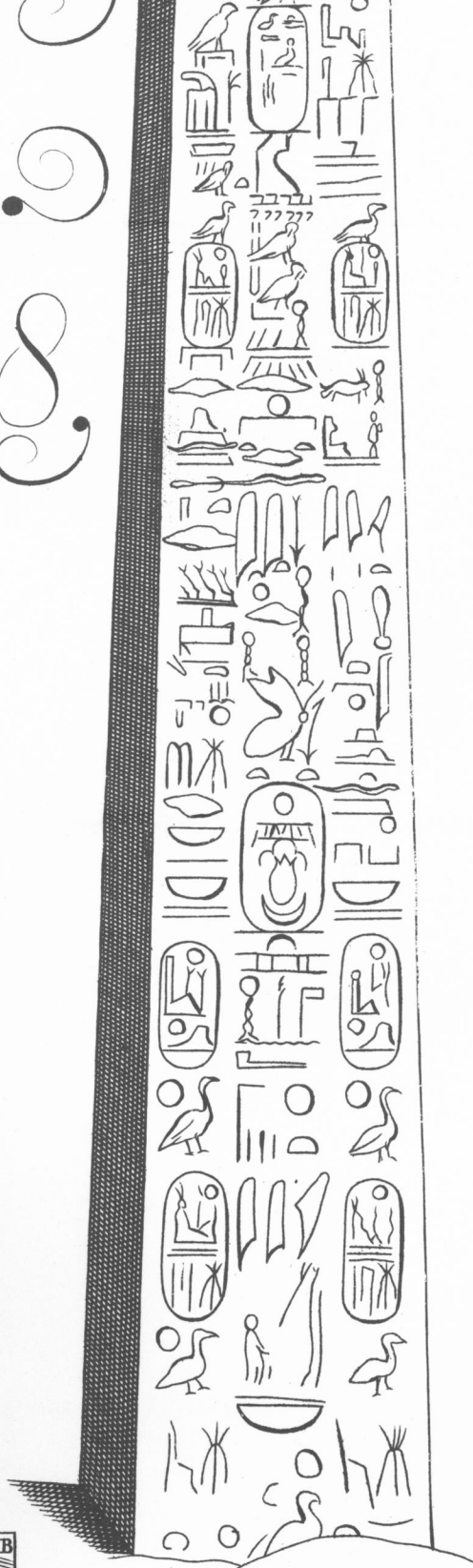
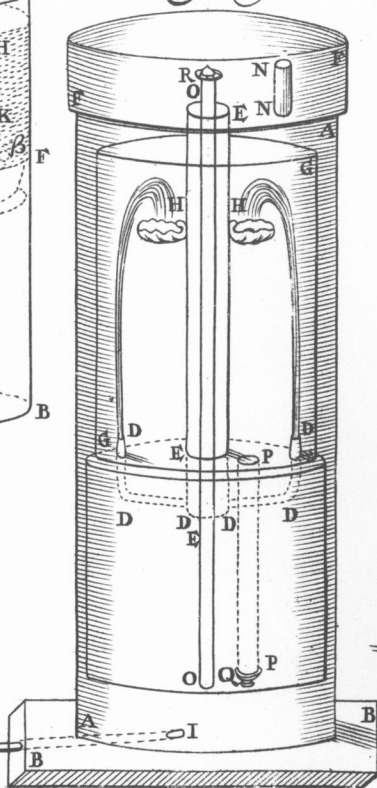
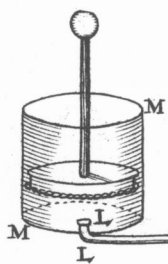
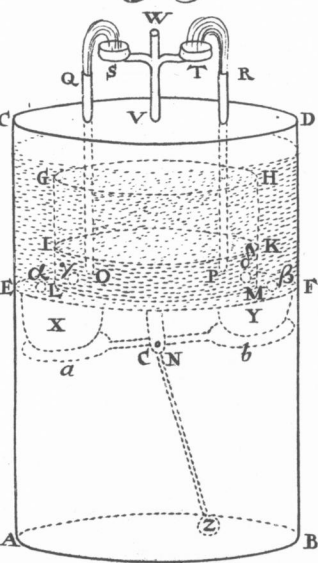
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*Fig. 3.*



*Fig. 4.*



*Mungesses sculp.*

hibebantur, quam aliis recentioribus plurimis, mediocris quidem longitudinis, quarum maximæ semissem pedis non excedebant, sed gracilioribus & vivacibus, animadvertēbamus, quod mirum, declinationem acus à pristina nec in uno minuto discrepare, sed in quavis meridiana exacte cum priori convenire, ad Occas. scilicet  $5^{\circ} 5'$ . An autem interea temporis ulterius processerit, ut nunc in situ retrogrado ejus deviatio deprehensa fuerit, quod certe casu evenisse potuisset, non liquet, cum nec temere istud statuere, quin in eam sententiam, quod stationarius (procul dubio circularis motus) in eodem puncto permanferit, pronius abire velimus.

Ita D. *Eimmartus* perscripsit ad amicum suum *Andream Arnoldum*, qui isthæc *Regiæ Societati Londinensi*, Fautrici olim suæ, lubens meritoque transmittit.

*A Letter, subscribed W. Tenon, concerning Dr Papin's new Water-Engine.*

SIR,

THE other day, upon reading in the *Transactions*, a description of the effects of a *Water-Engine*, invented by Dr *Papin*, and propounded as a *Probleme* to find out the contrivance, there came into my mind the following thought. I do not think it is the same with his, nor so good, but such as it is I send you, because variety of fancies gives hints many times to better new inventions.

Tab. 1. Fig. 3. *ABDE* signifies a cylindrical Vessel,  
closed

closed on every side, and divided into two rooms by the floor *EF*.

*GLMH*, is another Cylindrical Vessel within that upper room, cemented with its mouth downwards to the floor, and full of water up to the surface *IK*; the upper part thereof *G I K H*, being full of Air.

*QO*, *RP* two Pipes, open above and below, and let through the upper room into this Vessel, and reaching almost down to the floor *EF*.

*UV* a Pipe open above and below, and let into the upper room. These Pipes must be close joyned round about them to the floors *CD*, and *GH*.

*X*, *Y*, two little hemispherical bladders, prepared with Oyl or some Oily substance (as Butter or Turpentine) against water, and cemented with their Mouths upward to the floor *EF* underneath.

*a*, *β* two valves opening out of the upper room into the bladders.

*γ*, *δ* two other valves opening out of the bladders into the inner Vessel above.

*NZ* a pendulum playing upon the center *N*, and having two battledoor arms *a b* to squeeze alternately the bladders which rest upon them.

Let the upper room be filled with water at the Pipe *UV*, and if the pendulum be made to play by Clockwork, the bladders will perpetually pump it thence into the inner Vessel, and the compressed Air *G I K H* in the upper part of that Vessel, pressing upon the surface of the water *IK*, will force it thence into the Pipes *OQ*, *PR*, out of which spouting with a perpetual even stream into the spoons *S*, *T*, it will run down by the Pipe *WV*, into the upper room again. The pendulum will play most easily when the upper room is filled to the top of the Pipe *WV*. Instead of the bladders may be other contrivances, as of suckers or little Organ bellows, playing alternately with two leaves about an axis in the middle.